

said backing being made from a formulation comprising a dispersion of said fire retardant components and said binder in a solvent having water as the major proportion; and said formulation being coated on said carpet fibers and cured to provide said fire resistant carpet.

~~2~~ 18. The carpet according to claim ~~17~~, wherein the fibers of said carpet include nylon fibers.

~~3~~ 19. The carpet according to claim ~~18~~, wherein said standards for smoke generation and toxic gas emissions are the Airbus ATS 1000.001/ABD 0031 issue 5 smoke emission and toxic gas standards.

~~4~~ 20. The carpet according to claim ~~18~~ which when tested in accordance with the Airbus ATS 1000.001/ABD 0031 issue 5 smoke emission test methods, said carpet produces a resulting smoke with a specific optical density not greater than 200.

~~5~~ 21. The carpet according to claim ~~18~~, wherein the flammability standard is the twelve second vertical burn test in FAR 25.853(a), Appendix F, Part 1, (a)(1)(ii).

~~6~~ 22. The carpet according to claim ~~17~~, wherein said formulation further comprises a grinding aid mixed therein.

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23. The carpet according to claim ~~17~~, wherein said formulation further comprises a surfactant mixed therein.

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24. The carpet according to claim ~~17~~, wherein said formulation further comprises a pigment mixed therein.

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25. The carpet according to claim ~~17~~, wherein said formulation further comprises a filler mixed therein.

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26. The carpet according to claim ~~17~~, wherein the fire retardant spumescent is melamine.

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27. The carpet according to claim ~~17~~, wherein the catalyst is an ammonium polyphosphate.

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28. The carpet according to claim ~~17~~, wherein the char former is a pentaerythritol.

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29. The carpet according to claim ~~17~~, wherein the char former is a polysaccharide.

¹⁴
~~30.~~ The carpet according to claim ~~17~~, wherein said polymeric binder is a polyurethane.

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~~31.~~ The carpet according to claim ~~30~~, wherein the polyurethane is selected from the group consisting of a polyurethane polyether, a polyurethane polyester and mixtures thereof.

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~~32.~~ The carpet according to claim ~~30~~, wherein the polyurethane is selected from the group consisting of an aliphatic polyurethane, an aromatic polyurethane and mixtures thereof.

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~~33.~~ The carpet according to claim ~~30~~, wherein the polyurethane solids are about 7-12% by weight of said formulation.

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~~34.~~ The carpet according to claim ~~17~~, wherein the fire retardant components are about 39-61% by weight of said formulation.

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~~35.~~ The carpet according to claim ~~17~~, wherein the solvent is at least about 22% by weight of said formulation.

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36. The carpet according to claim 30, wherein said formulation comprises by

weight:

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Component	% Range
solvent-free anionic aliphatic polyurethane dispersion in water	18-30
water	5-15
2-Propanol	3-6
N-Methyl-2-Pyrrolidone	1-4
Acetylenic, diol-based dispersing agent	0.5-1.5
Polysaccharide resin	4-9
Melamine	7-13
Ammonium polyphosphate	25-35
Pentaerythritol	7-13
black iron oxide	0.5-1.5
defoamer	.01-1.0
ethoxylated 2, 4, 7, 9 - tetramethyl-5-decyn - 4, 7 - diol surfactant	.01-1.0
4% aqueous dispersion of clay filler	2-6

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cont

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37. The carpet according to claim 17, wherein the catalyst is an ammonium polyphosphate and the fire retardant spumescent is a melamine.